



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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Tom's COPY  
- FOR REVIEW OF RESPONSE

February 21, 1996

Gordon S. Ziegler  
President  
Ziegler Chemical & Mineral Corporation  
100 Jericho Quadrangle  
Jericho, New York 11753

Re: Review of ZI-95-1 Amendment to Large Mining Operations, Ziegler Chemical & Mineral Corporation (Ziegler), Ziegler Gilsonite Operations, M/047/013, Uintah County, Utah

Dear Mr. Ziegler:

The Division has completed a review of Ziegler's Notice of Intention To Commence Small Mining Operations information received November 6, 1995. The proposed mine project is within two miles of an existing Ziegler gilsonite mine. Because of this close proximity to other Ziegler sites, this submission was processed as an amendment/revision to Ziegler's existing Large Mining Operations Notice of Intention (LMO-NOI). A review of this proposal has led the Division to categorize this project as an "amendment" which is considered an insignificant change to the approved LMO-NOI (large mining notice). A "revision" is considered a significant change to a LMO-NOI which requires publication of a 30-day public comment period. A copy of the Division's policy for determining amendments and revisions is enclosed for your information. A copy of the Notice of Intention to Revise Mining Operations form (MR-REV) is also enclosed for your information.

This project involves land managed by the School Institutional Trust Lands Administration (SITLA). Their lease number for this project is ML-46565. We will coordinate our review with SITLA staff to the extent practical and copy them on any correspondence. In addition, we will discuss our bonding requirements with SITLA in a effort to simplify and accelerate the bonding process for this operation. Please note that Ziegler will need approval from both SITLA and the Division before beginning work on this project.

After reviewing the submitted information, the Division has a number of concerns which will need to be addressed before we can approve of this amendment. This submission was completed using a Small Mining Operation Notice of Intention form, consequently, the specific information required under several sections of the Minerals Rules for Large Mining Operations was not included. We will suspend our review of this amendment until we have received a response to this letter. Our comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.



R647-4-106 Operation Plan

*106.3 Estimated acreages disturbed, reclaimed, annually?*

Page one under the section titled "Proposed Mining Plan For Small Mining Operation For Ziegler Chemical & Mineral Corporation" describes the disturbance for the shaft sites to be 2.12 acres each. Page one under the section titled "Narrative Outline of Proposed Mining Plan For Ziegler..." describes each shaft location as disturbing 1.5 acres each. These two different values were slightly confusing. The Division has used the figure of 2.12 acres per shaft site since this value agrees with the total disturbed area figure of 4.55 acres. If this is an incorrect assumption, please advise us accordingly. AAG

*106.4 Nature of materials mined, waste & estimated tonnages*

Please provide an estimate of the amount of waste material to be produced and stockpiled on the surface. Page seven of the submission describes this waste rock as small amounts of unrecoverable gilsonite. Will this waste material also include other rock associated with shaft sinking? If so, please describe the nature of this material and provide an estimate of the anticipated amount. AAG

*106.5 Existing soil types, location, amount*

Please provide some basic soils information, including estimated depth of topsoil, the volume that can be salvaged, how the topsoil will be stripped and how stockpiles will be protected from further impacts due to erosion and otherwise. In addition, a basic laboratory soils analysis needs to be provided which includes the following parameters: texture, pH, SAR, EC, % Organic matter, Cation Exchange Capacity, and fertility (Nitrogen, Phosphorus (as  $P_2O_5$ ) and Potassium (as  $K_2O$ )). LK

*106.6 Plan for protecting & redepositing soils*

See comments under 106.5. LK

*106.7 Existing vegetation-species and amount*

Please provide the results of a vegetation survey that includes a list of common species found on the areas that will be disturbed and the percent of total vegetation ground cover. This information is needed to fully evaluate the revegetation plan and to establish the reclamation success standard for this area. LK

R647-4-107 Operation Practices

*107.5 Suitable soils removed & stored*

See comments under R647-4-106.5. LK

R647-4-109 Impact Assessment

This submission was completed using a Small Mining Operation Notice of Intention form, consequently, no information describing possible impacts was included. This information is required for an amendment to a large mining operation notice of intention. Please provide information to address the categories of possible impacts listed in this section of the rules. If this project will not have such impacts please explain why. AAG

*109.1 Impacts to surface & groundwater systems*

The topographic base map shows no significant surface water features such as streams or springs within close proximity to the mine site; however, the depth to groundwater at the mine site was not provided. Please describe the possible impacts to groundwater due to this proposed mine operation. TM

THEY MENTION SOME SEEPAGE OCCURS  
BUT IT IS INSIGNIFICANT AND AS SUCH  
NOT A CONCERN AT THIS  
TIME!

*109.2 Impacts to threatened & endangered wildlife/habitat*

This submission contained no information addressing possible impacts to threatened and endangered animal or plant species. This information may have been addressed under a survey performed to satisfy SITLA lease requirements; however, the Division does not have this information. If SITLA does not have this information, it is suggested that you contact the U.S. Fish and Wildlife Service for a clearance on threatened and endangered species. LK

*109.5 Actions to mitigate any impacts*

Please describe the actions proposed to mitigate any impacts described in the above categories.  
AAG

R647-4-110 Reclamation Plan

This submission was completed using a Small Mining Operation Notice of Intention form, consequently, the specific information required under portions of this section of the Large Mining Operation rules was not included. The information described below is required for an amendment to a large mining operation notice of intention. AAG

*110.1 Current & post mining land use*

Please describe the current land use, and the proposed post-mining land use for the area to be disturbed? AAG

*110.5 Revegetation planting program*

The revegetation plan needs to be clarified. After regrading and respreading topsoil, it is recommended that the area be ripped or disked to a minimum 6-inch depth. At this point it is assumed that the area will be broadcast seeded. If this is the case, after ripping, the area



would be seeded. It would be better to leave the area in a 'roughened' condition than to drag a harrow over the area. If the area is to be drill seeded, seed directly into the 'roughened' seed bed. Again, dragging with a harrow would not be done. Please clarify how you will perform this phase of reclamation. Also, it is unlikely that the proposed seed mix will establish a permanent and diverse vegetation cover. Attached is a preliminary recommended seed mix for your area. This mix is acceptable to SITLA as well. Once the vegetation information and/or a site visit is made, this mix may need some fine tuning. Please indicate if the attached seed mix is acceptable by including it in your revegetation plan. *LK*

#### R647-4-111 Reclamation Practices

##### *111.8 All roads & pads reclaimed*

Please commit to reclaiming all roads, pads, and compacted surfaces by regrading (as needed), ripping, topsoiling, and seeding. *LK*

##### *111.13 Revegetation-adaptable species*

See comments under R647-4-110.5. *LK*

#### R647-4-112 Variance

No variances from sections R647-4-107 Operation Practices, R647-4-108 Hole Plugging Requirements, and/or R647-4-111 Reclamation Practices were requested in this submission. *AAG*

#### R647-4-113 Surety

Page ten of this submission estimates \$5,000 as the cost of reclamation. A draft estimate similar to the one prepared by the Division for Ziegler's Cowboy Amendment was prepared for this project (copy attached). The Division's draft reclamation costs estimated for this proposal amounts to \$13,900 for one complete shaft setup and two sites without structures. This is considered a draft estimate and may need to be adjusted with new information provided by Ziegler in response to this letter.

As a result of the Division's inspection of 12/11/95, a summary listing of the mine sites was prepared (copy attached). This summary does not include the processing or office facilities. This updated summary indicates that sites C-1, C-2, and C-3 have been reclaimed, but have not yet survived three growing seasons. If the Division adjusts Ziegler's bond amount with the dollar amounts estimated for earthwork at these sites this would give Ziegler's account an excess of approximately \$5,300. This excess would reduce the amount of additional surety required for this amendment from \$13,900 to \$8,600. If there are no corrections to be made to the Division's draft estimate, then the current surety amount of \$105,300 would need to be increased by \$8,600 to a new total of \$113,900. This could be accomplished by means of a rider to the present Letter of Credit; however, a new Reclamation Contract form would be needed. *AAG*

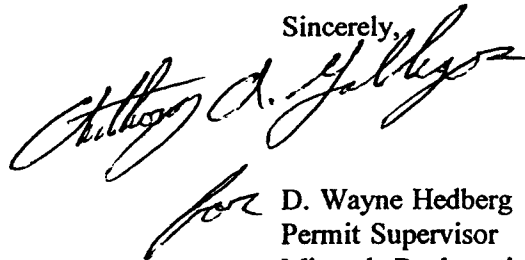
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Gordon S. Ziegler  
M/047/013  
February 21, 1996

R647-4-115 Confidential Information

This submission contained no information identified as confidential.

If you have any question regarding this letter please contact me, Tony Gallegos, Lynn Kunzler, or Tom Munson of the Minerals Staff. If you wish to arrange a meeting to discuss this review, please contact us at your earliest convenience to schedule a date and time. Thank you for your cooperation in completing this permitting action.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Wayne Hedberg", written over a horizontal line.

D. Wayne Hedberg  
Permit Supervisor  
Minerals Reclamation Program

jb

Attachments: seed mix recommendation; draft Division reclamation  
estimate; summary listing of Ziegler sites

Enclosures: DOGM Amendments/Revision policy; form MR-REV

cc: Norm Haslem, Ziegler Gilsonite Operations w/enclosures & attachments  
Bud Covington, Consultant for Ziegler w/enclosures & attachments  
Will Stokes, SITLA (ML-46565)

M47-13z1.let

Recommended Revegetation Species List  
for

**Ziegler Chemical and Mineral Corp.**  
**Independent ZI-95-1 Mine**  
**M/047/013**

Prepared by DOGM February 5, 1996

<u>Common Name</u>	<u>Species Name</u>	<u>*Rate lbs/ac (PLS)</u>
'Hycrest' crested wheatgrass	<u><i>Agropyron cristatum 'Hycrest'</i></u>	0.75
Intermediate wheatgrass	<u><i>Agropyron intermedium</i></u>	2.0
Russian Wildrye	<u><i>Elymus junceus</i></u>	2.0
Indian ricegrass	<u><i>Oryzopsis hymenoides</i></u>	1.5
Ladac Alfalfa	<u><i>Medicago sativa</i></u>	1.0
Yellow sweetclover	<u><i>Melilotus officinalis</i></u>	0.5
Palmer penstemon	<u><i>Penstemon palmeri</i></u>	0.5
Small burnet	<u><i>Sanguisorba minor</i></u>	1.0
4-Wing Saltbush	<u><i>Atriplex canescens</i></u>	1.0
Shadscale	<u><i>Atriplex confertifolia</i></u>	1.0
Rubber rabbitbrush	<u><i>Chrysothamnus nauseosus</i></u>	0.5
Forage kochia	<u><i>Kochia prostrata</i></u>	0.75
Total		12.5 lbs/ac

\*This the recommended broadcast seeding rate.

If the species are to be drill seeded, decrease the rate by 50%.

Ziegler Chemical & Mineral Corporation  
 ZI-95-1 PERMIT AMENDMENT of 11/6/95

DRAFT

Ziegler Gilsonite Mines

M/047/013

last revision 01/31/96

Prepared by Utah State Division of Oil, Gas & Mining

filename m47-13a2.wb2

- This estimate is for the ZI-95-1 Amendment area ONLY
- Reclamation surety for this amendment area is also held by SITLA for ML46565
- This estimate is based on information provided by the operator
- The amendment is for 1 complete shaft & 1 escapeway shaft constructed at the same time
- Page 1 of the amendment describes the disturbance as 0.309 acres of road, &  
 - two shaft sites involving 2.12 acres each, for a total of 4.55 acres
- Total disturbance for this amendment is 4.55 acres
- Mobilization is included at 1/2 due to probable reclamation of multiple sites at once

ONE SHAFT SETUP	#	UNITS	UNIT	\$/UNIT	\$	
removing headframe - crane	10	hr		120	1,200	(1)
moving headframe, hoist, etc.	20	hr		65	1,300	(1)
general labor, 3-man crew, 3-10hr days	90	hr		10	900	(2)
subtotal for 1 shaft setup					3,400	
UNRECLAIMED SITE WITHOUT STRUCTURES(headframe, bldgs, etc.)						
general labor, 3-man crew, 3-10hr days	90	hr		10	900	(2)
shaft capping-concrete	3.5	cy		56	198	(3)
shaft capping-timber(4-6"x 6"x 6')	4	timber		29	115	(4)
shaft capping-rebar (16-5/8" x 5')	16	rebar		6.0	96	(5)
ripping compacted areas (0.6 mph)	2.12	acre		411	873	(6)
regrading wasterock into shaft	0.25	acre		360	90	(7)
spreading topsoil	2.12	acre		430	912	(8)
seeding disturbed area	2.12	acre		110	233	(9)
subtotal for 1 site without structures					3,416	
subtotal for 2 sites without shaft structures					6,833	
add in reclamation of 1 complete shaft setup					3,400	
add in road ripping/regrading	0.31	acre		430	133	(10)
add in road topsoiling	0.31	acre		430	133	(10)
add in road seeding	0.31	acre		110	34	(9)
subtotal					10,533	
add in 1/2 mobilization	1	equip		500	500	
subtotal					11,033	
add in 10% contingency					1,103	
subtotal in 1996 dollars					12,137	
add 2.68% escalation for 5 years to 2001-\$					1,716	
TOTAL					13,853	
ROUNDED TOTAL IN 2001-\$					\$13,900	

average cost per acre

\$3,055

NOTE: shaded items indicate DOGM assumptions

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**DOGM NOTES**

- |      |  |
|------|--|
| (1)  | Ziegler unit costs from Cowboy Amendment calculations                    |
| (2)  | DOGM adjusted #days  |
| (3)  | MEANS-1996 Heavy Construction Cost Data 033-100-126-0100 (2500psi conc   |
| (4)  | MEANS-1996 Heavy Construction Cost Data 061-100-118-0250                 |
| (5)  | MEANS-1996 Heavy Construction Cost Data 032-100-107-2420 (#5, 2ft bar, a |
| (6)  | DOGM assumed 60% of total area; ripping D8N 0.6 mph                      |
| (7)  | DOGM estimate of area, D8N regrade 0.7 ft deep, 50 ft push               |
| (8)  | DOGM estimate of area, D8N regrade 0.5 ft deep, 100 ft push              |
| (9)  | DOGM estimate of unit cost   |
| (10) | DOGM, D8N regrade 0.5 ft deep, 100 ft push                               |
- 

**INFO FROM PERMIT AMENDMENT**

	<u>L1</u>	<u>W1</u>	<u>A1</u>	
new road	900	15	13,500	sq-ft
shaft area includes hoist house & generator house	300	300	90,000	sq-ft
compressor house	50	50	2,500	sq-ft
second shaft area	300	300	90,000	sq-ft
second compressor house	50	50	2,500	sq-ft
wasterock pile-included in shaft area (assumed)			0	sq-ft
topsoil stockpile-included in shaft area (assumed)			0	sq-ft
wooden prop storage-included in shaft area (assumed)			0	sq-ft
Total sq-ft			198,500	sq-ft

**TOTAL ACREAGE FOR AMENDMENT****4.56 acres**



# GILSONITE MINE SITES - ZIEGLER CHEMICAL & MINERAL COMPANY

M/047/013

last revision 2/21/96

<i>Mine site (1)</i>	<i>acre</i>	<i>land owner</i>	<i>DOGM file #</i>	<i>status</i>	<i>location</i>
I-3	1.38		M/047/013	active	SE/4 NE/4 sec 16 T9S, R24E
I-4	1.41		M/047/013	active	SW/4 NE/4 sec 16 T9S, R24E
I-5	1.20	SITLA ML851-A	M/047/013	active	NW/4 NE/4 sec 16 T9S, R24E
LB-1		patent		vent shaft only	
LB-3	1.14		M/047/013	active	SW/4 SE/4 sec 16 T9S, R24E
LB-8	1.00		M/047/013	active; escapeway for LB-3	SE/4 SE/4 sec 16 T9S, R24E
LB-11	1.01		M/047/013	pumping water, suspended	NE/4 NW/4 sec 22 T9S, R24E
LB-12	1.51		M/047/013	pumping water, suspended	NE/4 NW/4 sec 22 T9S, R24E
LB-8A	1.00	SITLA	M/047/013	stockpile area, active	SW/4 SW/4 sec 15 T9S, R24E
LE-1 Middle	1.10		M/047/013	active	SE/4 SE/4 sec 30 T9S, R24E
LE-7				reclaimed ~1993	
C-1	1.24	SITLA ML20781	M/047/013	shaft sunk & backfilled, two acres reclaimed in 1994; unreleased, area includes C-2	NE/4 SE/4 sec 29 T10S, R21E
C-2		SITLA ML20781	M/047/013	no shaft sunk, surface disturbance only, reclaimed in 1994; unreleased; included in C-1 area	NE/4 SE/4 sec 29 T10S, R21E
C-3	1.50	SITLA ML19868, ML20779	M/047/013	site reclaimed 1995(?), unreleased	SW/4 NW/4 sec 29 SE/4 NE/W sec 30 T10S, R21E

Page 2  
 Gilsonite Mine Sites  
 M/047/013  
 February 21, 1996

<i>Mine site (I)</i>	<i>acre</i>	<i>land owner</i>	<i>DOGM file #</i>	<i>status</i>	<i>location</i>
CB-1	3.30	BLM U-0122693	M/047/013	active	SW/4 SE/4 sec 33 T8S, R21E
Neal-1	4.48	SITLA ML46896	S/047/063	active	SW/4 NW/4 sec 32 T11S, R24E
Z-1	4.55	SITLA ML19868	M/047/013	proposed for startup in 1996	NW/4 NW/4 sec 16 T9S, R24E

NOTES: (1) I = Independent, LB = Little Bonanza, LE = Little Emma, C = Cottonwood, CB = Cowboy

ziegler1.tab